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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/054,647	01/22/2002	Robert Lawton	00-1278-C	9151

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MCDONNELL BOEHNEN HULBERT & BERGHOFF
300 SOUTH WACKER DRIVE
SUITE 3200
CHICAGO, IL 60606

EXAMINER	
FORD, VANESSA L	

ART UNIT	PAPER NUMBER
1645	11

DATE MAILED: 01/24/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/054,647	LAWTON ET AL.	
	Examiner	Art Unit	
	Vanessa L. Ford	1645	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *14 November 2002* .

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-9* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-9* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

FINAL ACTION

1. This Office Action is responsive to Applicant's amendment and response filed November 14, 2002. Claims 1 and 3-6 have been amended. Claims 7-9 have been added.

2. The text of those sections of Title 35, U.S. Code not included in this action can be found in the prior Office Action.

Objection/Rejections Withdrawn

3. In view of Applicant's amendment the following Objections and Rejections have been withdrawn:

a) Objection to the specification, page 2, paragraph 1 of previous Office action.
b) Objection to the specification, page 2, paragraph 2 of previous Office action.
c) Objection to claims 4-6, page 2, paragraph 3 of previous Office action.
d) Rejection of claims 1-6 under 35 U.S.C. 102(b), pages 11-12 of the previous Office action.

Rejections Maintained

4. The rejection of claims 1-6 and newly submitted claims 7-9 under 35 U.S.C. 112, first paragraph is maintained for the reasons set forth on pages 2-4, paragraph 4 of the previous Office Action.

The rejection was on the grounds that the claims are rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with

which it is most nearly connected, to make and/or use the invention. *This is a written description rejection.*

The specification broadly describes as a part of the invention a composition and an article of manufacture comprising the isolated polypeptide of SEQ ID No: 2 and variants thereof. The specification states that "variants in which amino acids of the polypeptides of the invention are substituted, deleted or added in any combination are contemplated by the invention". The specification also states " that naturally occurring variants and non-naturally occurring variants are included in the invention and may be produced by mutagenesis techniques or by direct synthesis" (page 7). Applicant has broadly described the invention as embracing any substitution, insertion or deletion change of amino acids throughout the length of the polypeptide sequence. Variants of SEQ ID No:2 correspond to sequences from other species, mutated sequences, allelic variants, splice variants, sequences that have a variant degree of identity (similarity, homology), and so forth. None of these sequences meet the written description provision of 35 U.S.C. 112, first, paragraph. The specification provides insufficient written description to support the genus encompassed by the claim. Vas-Cath Inc. v. Mahurkar, 19 USPQ2d 1111, makes clear that "applicant must convey with reasonable clarity to those skilled in the art that, as of the filing date sought, he or she was in possession *of the invention.* The invention is, for purposes of the 'written description' inquiry, *whatever is now claimed.*" (See page 1117.) The specification does not "clearly allow persons of ordinary skill in the art to recognize that [he or she] invented what is claimed." (See Vas-Cath at page 1116.)

With the exception of SEQ ID NO:2, the skilled artisan cannot envision the detailed chemical structure of the encompassed polypeptide regardless of the complexity or simplicity of the method of isolation. Adequate written description requires more than a mere statement that it is part of the invention and reference to a potential method for isolating it. See Fiers v. Revel, 25 USPQ2d 1601, 1606 (CAFC 1993) and Amgen Inc. V. Chugai Pharmaceutical Co. Ltd., 18 USPQ2d 1016. In Fiddes v. Baird, 30 USPQ2d 1481, 1483, claims directed to mammalian FGF's were found unpatentable due to lack of written description for the broad class. The specification provided only the bovine sequence.

Therefore, only SEQ ID NO: 2 but not the full breadth of the claim (or none of the sequences encompassed by the claim) meets the written description provision of 35 USC 112, first paragraph. The species specifically disclosed are not representative of the genus because the genus is highly variant. Applicant is reminded that Vas-Cath makes clear that the written description provision of 35 USC 112 is severable from its enablement provision. (See page 1115.)

Applicant urges that claims 1, 3 and 5 have been amended to recite that the variant of SEQ ID No:2 is a phenotypically silent amino acid substitution variant and

new claims 7-9 have been added that recite that the variant of SEQ ID NO:2 is a conservative amino acid substitution variant. Applicant urges that one skilled in the art would recognize that the Applicants were in possession of an isolated polypeptide of SEQ ID NO:2, phenotypically silent amino acid substitution variants of SEQ ID NO:2 and conservative amino acid substitution variants of SEQ ID NO:2. Applicant urges that the specification teaches that variants are phenotypically silent amino acid substitutions and/or conservative amino acid substitutions and provides detail guidance on how to construct such variants. Applicant urges that the specification teaches that the polypeptides do not comprise 100% identity to a polypeptide sequence shown in SEQ ID Nos: 1-7 are considered variants and the polypeptides have at least 85% -99% identity to the polypeptides sequence shown in SEQ ID Nos: 1-7. Applicant urges that specification defines the meaning of "identity" and explains that sequences are aligned for identity calculations using a mathematical algorithm. Applicant urges that the claimed variant shave adequate written description in the specification.

Applicant's arguments filed November 14, 2002 have been fully considered but they are not persuasive. It is the Examiner's position that there is nothing on the record to that the specification is enabled for the full scope of the claims and therefore does not meet the written description requirement as set forth in 35 U.S.C. 112, first paragraph. The specification broadly describes a genus of isolated polypeptides. Applicant has provided no structural description accompanying the variant language recited in the claims. While the use of sequence algorithm techniques are known in the art, it is not routine in the art to screen for multiple substitutions or multiple modifications of other

types and the positions within the polypeptide's sequence where amino acid modifications can be made with a reasonable expectation of success in obtaining similar activity are limited in any polypeptide and the result of such modifications is unpredictable based on the instant disclosure. Therefore, only SEQ ID NO: 2 and not the full breadth of the claim (i.e. variants such as phenotypically silent amino acid substitutions and/or conservative amino acid substitution variants) meets the written description provision of 35 USC 112, first paragraph. The species specifically disclosed are not representative of the genus because the genus is highly variant.

5. The rejection under 35 U.S.C. 112, first paragraph is maintained for 1-6 and newly presented claims 7-9 for the reasons set forth pages 4-7, paragraph 5 of the previous Office Action.

The rejection was on the grounds that the claims rejected under 35 U.S.C. 112, first paragraph, because the specification, while being enabling for a composition and an article of manufacture that comprise SEQ ID No:2, does not reasonably provide enablement for a composition or an article of manufacture that comprise variants of SEQ ID. No:2. The specification does not enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the invention commensurate in scope with these claims.

Claims 1-6 are directed to a composition and a article of manufacture comprising the isolated polypeptides of SEQ ID NO: 2 and variants thereof.

The specification is enabling only for the polypeptides of SEQ ID NO:2 as disclosed in the specification. The specification states that "variants in which amino acids of the polypeptides of the invention are substituted, deleted or added in any combination are contemplated by the invention". The specification also states " that naturally occurring variants and non-naturally occurring variants are included in the invention and may be produced by mutagenesis techniques or by direct synthesis" (page 7). The specification teaches that there are many tolerable and conservative amino acid substitutions which can be made that are not critical to protein function (pages 7-9). There is no guidance provided as to which amino acids can be added, deleted or substituted and the polypeptide would retain its biological function. The scope of the claims is not commensurate with the enablement provided by the

disclosure with regard to the extremely large number of polypeptides broadly encompassed by the claims and the claims broadly encompass a significant number of inoperative species. Since the amino acid sequence of the polypeptide determines its structural and functional properties, predictability of which changes can be tolerated in a polypeptide's amino acid sequence and still retain similar activity/utility requires a knowledge with regard to which amino acids in the polypeptide's sequence, if any, are tolerant of modification and which are conserved (i.e. expected intolerant to modification) and detailed knowledge of the ways in which the polypeptide's structure relates to function. However, the problem of the prediction of polypeptide structure from mere sequence data of a single polypeptide and in turn utilizing predicted structural determinations to ascertain functional aspects of the polypeptide and finally what changes can be tolerated with respect thereto is extremely complex and outside of the realm of routine experimentation.

While recombinant and mutagenesis techniques are known, it is not routine in the art to screen multiple substitutions or multiple modifications of other types and the positions within the polypeptide's sequence where amino acid modifications can be made with a reasonable expectation of success in obtaining similar activity are limited in any polypeptide and the result of such modifications is unpredictable based on the instant disclosure. One skilled in the art would expect any tolerance to modifications, e.g., multiple substitutions. The sequence of some polypeptides is highly conserved and one skilled in the art would not expect tolerance to any amino acid modification in such polypeptides.

Factors to be considered in determining whether undue experimentation is required, are set forth in In re Wands 8 USPQ2d 1400. They include (1) the quantity of experimentation necessary, (2) the amount of direction or guidance presented, (3) the presence or absence of working examples, (4) the nature of the invention, (5) the state of the prior art, (6) the relative skill of those in the art, (7) the predictability or unpredictability of the art and (8) the breadth of the claims.

Applying the above test to the facts of record, it is determined that 1) no declaration under 37 C.F.R. 1.132 or other relevant evidence has been made of record establishing the amount of experimentation necessary, 2) insufficient direction or guidance is presented in the specification with respect to selecting other antigens having claimed functional features, 3) the relative skill of those in the art is commonly recognized as quite high (post-doctoral level). One of skill in the art would require guidance, in order to make or use polypeptides that are variants of SEQ ID NO: 2 in a manner reasonable in correlation with the scope of the claims. Without proper guidance, the experimentation is undue.

Applicant urges that the specification teaches polypeptides have at least 85% - 99% identity to the polypeptides sequence shown in SEQ ID No: 2 and specifically binds to an anti-*Ehrlichia* antibody. Applicant urges that one skilled in the art could

easily design and make a polypeptide that falls within the given percentage sequence identity and screen it for specific binding to an anti-*Ehrlichia* antibody. Applicant urges that substituted amino acids are phenotypically silent amino acid substitutions or conservative amino acid substitutions and one skilled in the art given the specification could design a polypeptide that is a phenotypically silent amino acid substitution variant or conservative amino acid substitution variant of SEQ ID NO:2. Applicant urges that only routine experimentation is necessary to design and make a phenotypically silent amino acid substitution variant or a conservative amino acid substitution variant and the preparation of these variants are well known and understood in the art.

Applicant's arguments filed November 14, 2002 have been fully considered but they are not persuasive. The claims as amended encompass isolated polypeptides that are phenotypically silent amino acid substitution variants or conservative amino acid substitution variants of SEQ ID NO:2, each specifically binding to an anti-*Ehrlichia* antibody. The specification does not provide enablement for the full scope of the claimed invention. Applicant has provided no structural description accompanying the variant language recited in the claims. While recombinant and mutagenesis techniques are known, it is not routine in the art to screen multiple substitutions or multiple modifications of other types and the positions within the polypeptide's sequence where amino acid modifications can be made with a reasonable expectation of success in obtaining similar anti-*Ehrlichia* antibody binding activity are limited in any polypeptide and the result of such modifications is unpredictable. One skilled in the art would not expect any tolerance to modifications, e.g., multiple substitutions. The sequence of

some polypeptide is highly conserved and one skilled in the art would not expect tolerance to any amino acid modification in such nucleic acid polypeptides. One skilled in the art would require guidance in order to make and use the claimed isolated polypeptide commensurate in scope with the claims.

6. The rejection of claims 1-6 and newly submitted claims 7-9 under 35 U.S.C. 102(a) is maintained for the reasons set forth on pages 8-9, paragraph 9 of the previous Office Action.

The rejection was on the grounds that Waner et al teach a composition comprising culture growth medium and DH82 cells infected with Israeli isolate 611(page 240, 2nd column). Waner et al teach the use of a article of manufacture (i.e. a clinic ELISA test kit). Waner et al teach that *Ehrlichia canis* IgG antibody titers of serum samples were determined by using a commercial ELISA test kit containing plastic combs sensitized with *E. canis* antigen. Waner et al teach that the sera to be tested was incubated with the comb (containing antigen dots). Waner et al teach that after washing away unbound antibodies the comb were allowed to react with goat anti-dog IgG alkaline phosphatase conjugate. Waner et al teach that bound antibodies were detected with a precipitating chromogen, 5-bromo-4chloro-3-indolyl phosphate and nitro-blue tetrazolium. The polypeptide sequence used in the composition would be inherent in the teachings of the prior art. The polypeptide sequence contained on the plastic comb (i.e. article of manufacture) would also be inherent in the teachings of the prior art. It is well known in the art to include packing material that comprises a label to indicate the intended use of the article of manufacture. The article of manufacture of Waner, et al appears to be the same as the claimed invention.

Since the Office does not have the facilities for examining and comparing applicant's composition and article of manufacture with the device of the prior art, the burden is on the applicant to show a novel or unobvious difference between the claimed product and the product of the prior art (i.e., that the composition and article of manufacture of the prior art does not possess the same material structural and functional characteristics of the claimed composition and article of manufacture). See In re Best, 562 F.2d 1252, 195 USPQ 430 (CCPA 1977) and In re Fitzgerald et al., 205 USPQ 594.

Applicant urges that anticipation under 35 U.S.C. 102 requires the presence in a single prior art disclosure each and every element of a claimed invention. Applicant

urges that Waner et al do not teach or suggest the use of distinct *E. canis* polypeptides as shown in SEQ ID NO:2. Applicant urges that Waner et al teach an IFA for *Ehrlichia canis* that uses DH82 cells that are heavily infected with *E. canis* as an antigen. Waner et al also teaches an ELISA for *E. canis* that uses an *E. canis* antigen derived from mouse J774.A1-infected cells or whole proteins as assay antigens. Applicant urges that Waner et al does not identify the polypeptide fragments for diagnostic use nor do Waner et al teach or suggest that the polypeptides of SEQ ID NO:2 would be useful as individual polypeptides apart from entire *E. canis* infected cells or entire proteins. Applicant urges that the Office relies on the statement that the article of manufacture "appears" to be the same as the claimed invention and asserts that the claimed polypeptides are inherent in the teaching of the prior art without providing any reasoning or evidence why the claimed about 20 amino acid polypeptides as shown in SEQ ID NO:2 would be present in Waner et al.

Applicant's arguments filed November 14, 2002 have been fully considered but they are not persuasive. It is the Examiner's position that there is nothing on the record to show that the claimed composition and article of manufacture differs the composition and article of manufacture of the prior art. The claims are drawn to composition and article of manufacture consisting essentially of an isolated polypeptide shown in SEQ ID NO:2 or a phenotypically silent amino acid substitution variant thereof. Waner et al teach an ELISA that uses *E. canis* antigen derived from mouse J774. A1-infected cells (page 241). The Examiner disagrees with Applicant's assertion that the *E. canis* antigen of the prior art is not apart from the infected cells, since Waner et al teach

antigen was derived from the mouse J774. A1-infected cells. The Examiner also disagrees with Applicant's assertion that Waner et al do not identify the polypeptide fragments for diagnostic use nor do Waner et al teach or suggest that the polypeptides of SEQ ID NO:2. There is no requirement or limitation in the claims that the composition and article of manufacture be used for diagnostic purposes. However, Waner et al teach that the ELISA of the prior art can be use to confirm or reject a diagnosis of canine monocytic ehrlichiosis (CME) (page 242). Waner et al further teach that the ELISA kit can be used efficaciously during all phases of CME and the ELISA could be used to and in the diagnosis of CME (page 243). Since the claimed invention encompass variants of SEQ ID NO: 2, one skilled in the art could reasonably conclude that the *E. canis* polypeptide of the prior art is a variant of SEQ ID NO:2 since, Applicant has provided no side-by-side comparison to show that the claimed polypeptide differs from the *E. canis* polypeptide of the prior art. Therefore, Waner et al anticipate the claimed invention.

7. The rejection of claims 1-6 and newly submitted claims 7-9 under 35 U.S.C. 102(b) is maintained for the reasons set forth on pages 9-10, paragraph 10 of the previous Office Action.

The rejection was on the grounds that Cadman et al teach an article of manufacture (i.e. a cross dot blot apparatus), nitrocellulose paper coated with *E. canis* antigen. Cadman et al teach a composition comprising 0.7 μg of protein in TBS (page 362, 1st column). Cadman et al teach that test sera was incubated with the antigen (dots on nitrocellulose paper). Cadman et al teach that the bound antibody was detected with peroxidase-labeled goat anti-dog IgG and 4-chloronaphthol. The polypeptide sequence used in the composition would be inherent in the teachings of the prior art. The polypeptide sequence contained on the nitrocellulose membrane (i.e.

article of manufacture) would also be inherent in the teachings of the prior art. It is well known in the art to include packing material that comprises a label to indicate the intended use of the article of manufacture. The composition and article of manufacture of Cadman, et al appears to be the same as the claimed invention.

Since the Office does not have the facilities for examining and comparing applicant's composition and article of manufacture with the composition and article of manufacture of the prior art, the burden is on the applicant to show a novel or unobvious difference between the claimed product and the product of the prior art (i.e., that the composition and article of manufacture of the prior art does not possess the same material structural and functional characteristics of the claimed composition and article of manufacture). See In re Best, 562 F.2d 1252, 195 USPQ 430 (CCPA 1977) and In re Fitzgerald et al., 205 USPQ 594.

Applicant urges that Cadman et al do not teach or suggest the use of distinct *E. canis* polypeptides as shown in SEQ ID NO:2 and the claimed specified variants. Applicant urges that Cadman et al teach an IFA for *Ehrlichia canis* that uses DH82 cells that are heavily infected with *E. canis* as an antigen. Applicant urges that Cadman et al teaches an IFA for *E. canis* that uses DH82 cells which are heavily infected with *E. canis* as an antigen and Cadman et al teach a dot-blot blot enzyme linked immunoassay for *E. canis* that uses an *E. canis* antigen purified from infected DH82 cells. Applicant urges that Cadman et al teach the use of whole *E. canis* infected cells or whole proteins purified from *E. canis* infected cells in the disclosed assays. Applicant urges that Cadman et al do not identify the polypeptide fragments for diagnostic use nor do Cadman et al teach or suggest that the polypeptides of SEQ ID NO:2 would be useful as individual polypeptides apart from entire *E. canis* infected cells or entire proteins. Applicant urges that the Office does not provided fact, technical reasoning reasoning and/or extrinstic evidence to demonstrate that the claimed polypeptides are present in the Cadman devices. Applicant urges that Cadman et al do no teach each

an every element of the claimed invention and therefore does not anticipate the claimed invention.

Applicant's arguments filed November 14, 2002 have been fully considered but they are not persuasive. It is the Examiner's position that there is nothing on the record to show that the claimed composition and article of manufacture differs the composition and article of manufacture of the prior art. The claims are drawn to composition and article of manufacture consisting essentially of an isolated polypeptide shown in SEQ ID NO;2 or a phenotypically silent amino acid substitution variant thereof. Cadman et al teach nitrocellulose paper containing *E. canis* antigen, therefore the prior art teaches polypeptides that are apart from whole cells. The Examiner disagrees with Applicant's assertion that Cadman et al do not identify the polypeptide fragments for diagnostic use nor do Cadman et al teach or suggest that the polypeptides of SEQ ID NO:2. There is no requirement or limitation in the claims that the composition and article of manufacture be used for diagnostic purposes. However, Cadman et al teach a indirect fluorescent assay (IFA) which is the recommended diagnostic test for *E. canis* infection, and has shown to be both sensitive and specific. The claimed invention encompass variants of SEQ ID NO: 2, therefore one skilled in the art could reasonably conclude that the *E. canis* polypeptide of the prior is a variant of SEQ ID NO:2 since, Applicant has provided no side-by-side comparison to show that the claimed polypeptide differs from the *E. canis* polypeptide of the prior art. Therefore, Cadman et al anticipate the claimed invention.

8. The rejection of claims 1-6 and newly submitted claims 7-9 under 35 U.S.C. 102(b) is maintained for the reasons set forth on pages 12-13, paragraph 12 of the previous Office Action.

The rejection was on the grounds that Rikihisa et al teach immunogenic compositions comprising the isolated polypeptide of SEQ ID NO:2 and pharmaceutically acceptable adjuvants (page 12). Rikihisa et al teach an antigen (i.e. isolated polypeptide) used in a Western immunoblot analysis and a dot blot analysis to detect the presence of antibody to *E. canis* (page 17). The polypeptide of SEQ ID No: 2 is disclosed in Figure 19A). The article of manufacture (i.e. dot blot used in the dot blot analysis) would be inherent in the teachings of the prior art. It is well known in the art to include packing material that comprises a label to indicate the intended use of the article of manufacture. The composition and article of manufacture of Rikihisa, et al appears to be the same as the claimed invention.

Since the Office does not have the facilities for examining and comparing applicant's composition and article of manufacture with the composition and article of manufacture of the prior art, the burden is on the applicant to show a novel or unobvious difference between the claimed product and the product of the prior art (i.e., that the composition and article of manufacture of the prior art does not possess the same material structural and functional characteristics of the claimed composition and article of manufacture). See In re Best, 562 F.2d 1252, 195 USPQ 430 (CCPA 1977) and In re Fitzgerald et al., 205 USPQ 594.

Applicant urges that Rikihisa et al do not teach or suggest the use of distinct *E. canis* polypeptides as shown SEQ ID NO:2 or its specified variants. Applicant urges that Rikihisa et al do not teach or suggest amino acid polypeptide of SEQ ID NO:2, instead Rikihisa et al teach a 288 amino acid sequence. Applicant urges that Rikihisa et al do not identify the polypeptide fragments for diagnostic use nor does Rikihisa et al teach or suggest that the polypeptides of SEQ ID NO:2 Rikihisa et al do not teach or suggest that the polypeptides of SEQ ID NO:2 would be useful as individual polypeptides apart from *E. canis* P30 protein. Applicant urges that the Office does not provided fact, technical reasoning reasoning and/or extrinstic evidence to demonstrate that the claimed polypeptides are present in the Rikihisa et al devices. Applicant urges

that Rikihisa et al do no teach each an every element of the claimed invention and therefore does not anticipate the claimed invention.

Applicant's arguments filed November 14, 2002 have been fully considered but they are not persuasive. It is the Examiner's position that there is nothing on the record to show that the claimed composition and article of manufacture differs the composition and article of manufacture of the prior art. The claims are drawn to composition and article of manufacture consisting essentially of an isolated polypeptide shown in SEQ ID NO:2 or a phenotypically silent amino acid substitution variant thereof. Rikihisa et al teach an antigen (i.e. isolated polypeptide) used in a Western immunoblot analysis and a dot blot analysis to detect the presence of antibody to *E. canis* (page 17). The Examiner disagrees with Applicant's assertion that Rikihisa et al does not identify the polypeptide fragments for diagnostic use nor do Rikihisa et al teach or suggest that the polypeptides of SEQ ID NO:2. There is no requirement or limitation in the claims that the composition and article of manufacture be used for diagnostic purposes. However, Rikihisa et al teach that an assay for diagnosing ehrlichiosis (see the Abstract and Example 5, page 17). The claimed invention encompass variants of SEQ ID NO: 2, therefore one skilled in the art could reasonably conclude that the *E. canis* polypeptides of the prior art are variants of SEQ ID NO:2 since Rikihisa et al teach that the invention embraces non-naturally occurring allelic forms or derivatives of the outer membrane proteins (i.e. P30) (page 10) and Rikihisa et al claim isolated polypeptides that are at least 85% homologous to the amino acid sequence shown in Figure 19 (claim 20, page 19). It should noted that the polypeptide of SEQ ID No: 2 is disclosed in Figure 19B

(amino acid residues 61-79) and represents a polypeptide that is at least 85% homologous to the amino acid sequence shown in Figure 19. Applicant has provided no side-by-side comparison to show that the claimed polypeptide differs from the *E. canis* polypeptides of the prior art. Therefore, Rikihisa et al anticipate the claimed invention.

Status of Claims

9. No claims allowed.

10. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

11. Any inquiry of the general nature or relating to the status of this general application should be directed to the Group receptionist whose telephone number is (703) 308–0196.

Papers relating to this application may be submitted to Technology Center 1600, Group 1640 by facsimile transmission. The faxing of such papers must conform with the notice published in the Office Gazette, 1096 OG 30 (November 15, 1989). Should applicant wish to FAX a response, the current FAX number for the Group 1600 is (703) 308-4242.

Any inquiry concerning this communication from the examiner should be directed to Vanessa L. Ford, whose telephone number is (703) 308-4735. The examiner can normally be reached on Monday – Friday from 7:30 AM to 4:00 PM. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Lynette Smith, can be reached at (703) 308–3909.

Vanessa L. Ford
Biotechnology Patent Examiner
January 18, 2003

LYNETTE R. F. SMITH
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 1600